



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY  
GOVERNOR

LYNDO TIPPETT  
SECRETARY

MEMORANDUM TO: Project Engineers  
Project Design Engineers

FROM: G. R. Perfetti, P. E.  
State Bridge Design Engineer

DATE: June 7, 2005

SUBJECT: THERMAL SPRAYED COATINGS

When thermal sprayed coatings are required, place the applicable note(s) on the plans stating the type of alloy required and its required thickness. For most applications the alloy and thickness will be prescribed in the Special Provision. However, for some applications the alloy and thickness are required as outlined below.

**Steel Piles in Corrosive Environments**

For steel piles in corrosive environments, 99.5 percent Aluminum (W-Al-1350) and a seal coat is required. Place the following note on the Steel Pipe Pile Standard Drawing:

***Apply an 8 mil thick 1350 Aluminum (W-Al-1350) thermal sprayed coating with a 0.5 mil thick seal coat to the piles in accordance with the Thermal Sprayed Coatings Special Provision and Section 442 of the Standard Specifications. For Thermal Sprayed Coatings, see Special Provisions.***

System 1 Paint is required on the portion of the steel pile (H or pipe piles) that is embedded in concrete. Place the following note on the plans:

***After driving the piles, apply 1 coat each of 1080-12 Brown and 1080-12 Gray paint to the embedded section of the metallized pile prior to concrete embedment in accordance with Section 442 of the Standard Specifications.***

### **Steel Girders**

When thermal sprayed coatings are used on girders an approved seal coat is required. Place the following note on the plans:

***Apply an 8 mil thick 99.99 percent Zinc (W-Zn-1) thermal sprayed coating with a 0.5 mil thick seal coat to all girder surfaces in accordance with the Thermal Sprayed Coatings Special Provision and Section 442 of the Standard Specifications. Prior to application, create a companion coupon for approval by the Engineer. For Thermal Sprayed Coatings, see Special Provisions.***

### **Aesthetic Considerations**

For applications where aesthetics are a major concern, add the following note to the plans:

***Prior to beginning metallization, the Contractor will provide metallized samples to the Engineer for approval.***

This policy is effective with the August 2005 letting. The Design Manual and the Standard Notes will be updated at a later date.

GRP/LBG/snj

cc: R. V. Keith, P. E.  
R. A. Raynor, P. E.  
R. A. Hancock, P. E.  
C. L. Jones, P. E.  
J. H. Emerson, P. E.  
T. S. Drda, P. E., FHWA